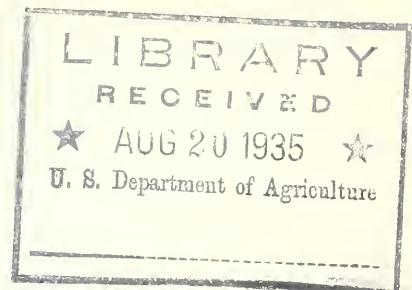
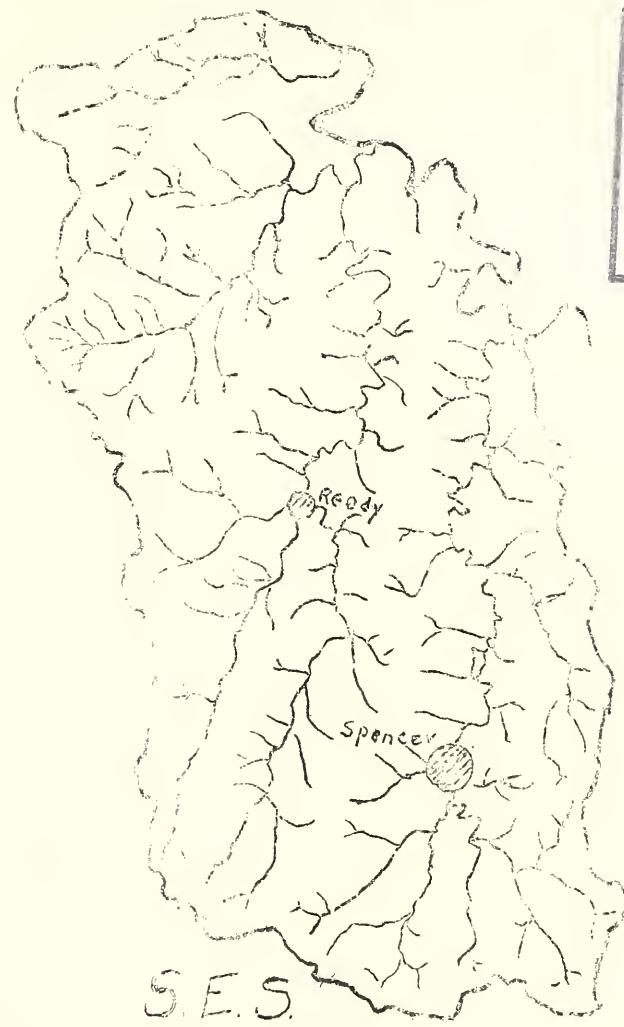


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NUMBER

August 1934



UNITED STATES
DEPARTMENT OF THE INTERIOR
SOIL EROSION SERVICE
Sponcer, West Va.

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With the present issue this news letter has broken the shell and emerged from an idea to a reality. It will appear monthly hereafter.

It originated in the conviction that there is a need for some means of regular contact, not only between the employees and departments of the Soil Erosion Service, but also between them and the cooperators. This idea has been fostered by Mr. Hoover, Mr. McKeever and Mr. Hebb as a possible means of making project #13 a more unified and a more useful service to the area.

Like all other efforts of the Soil Erosion Service, it cannot be successful except through cooperation. It will not have served its purpose if it is merely thrown in the wastebasket or used as a supplement to last year's Sears Roebuck catalogue. It will contain many articles and suggestions which are meant to be helpful. They can serve that purpose only if they are read and put into use.

Along with the instructive articles, will be others which are intended to interest, inform or entertain. We hope you may find each issue interesting and profitable.

NAME IT

No doubt you noticed the question marks in place of a title on the front cover. We are asking you to name it. We will give a prize for the best acceptable name submitted by any cooperator or a prospective cooperator. Mail the name or names you wish to suggest together with your name and address to the Soil Erosion Service, Spencer, West Virginia. It costs nothing to enter this contest and you may win. Send it in at once.

SOIL EROSION SURVEY

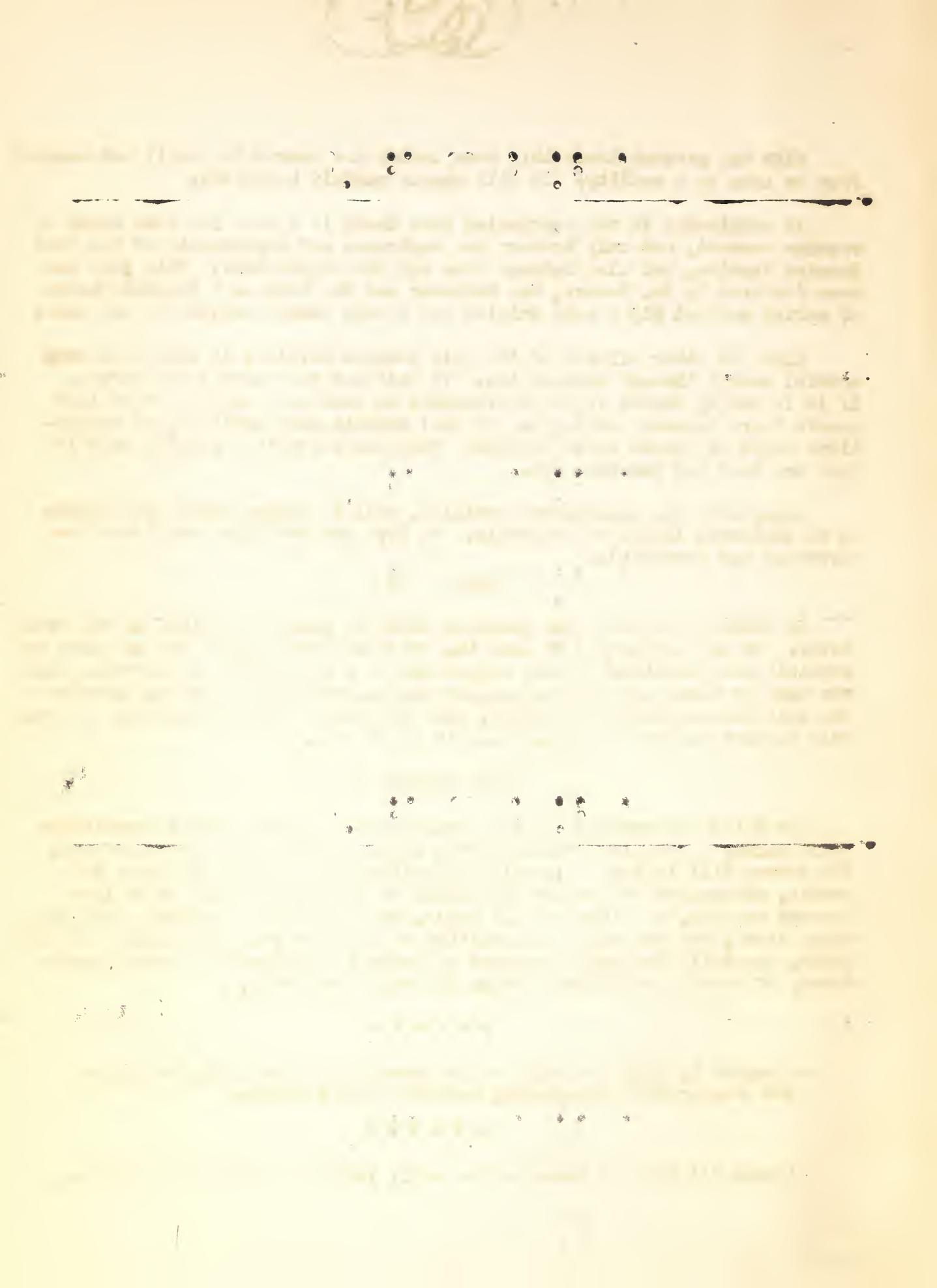
Our Soils Department is being organized this week and will immediately begin making a detailed Erosion Survey of the entire Reedy Creek Project. The survey will include a detailed classification of all soil types and series, an accurate record of the amount of top soil that has been lost through erosion, the slope of all lands, the amount of gullying that has taken place, and the type and condition of cover crops. In addition to this study, the Soils Department expects to conduct a State-wide Reconnaissance Survey of erosion conditions during the next few months.

* * * * *

On August 1, 1934 The Soil Erosion Service, Project #13, had signed 121 Cooperative Agreements, covering 22,221 acres.

* * * * *

Slogan: All life is based on the soil; let's save it for the future.



Success or failure in the production of alfalfa often depends upon a single essential factor. The following points are necessary for the successful production of this crop and should receive careful attention.

Soil:

The best type of soil for alfalfa should be one that is reasonably fertile and of good depth. Any of our bottom soils, if properly drained, should be able to produce an excellent stand of alfalfa. This crop is a deep-rooted crop and does not do well on thin, shale, upland soils. On the other hand, the crop will not persist for any length of time if subject to overflow or poorly drained soils.

Lime:

Alfalfa belongs to the legume family and it is lime loving. It will do its best on soils that have considerable lime materials present. If lime is not naturally present in a soil then it should be supplied as a soil amendment to fields that are to be cropped to alfalfa. There are suitable tests available which will give the lime requirement of any soil tested. The lime requirement is usually given as the number of tons of lime required to bring the soil to a neutral reaction.

In the application of lime, it is essential that over-liming is not practiced since too much lime will cause a decrease in the growth of plants. Lime should be applied several weeks in advance of seeding and should be worked thoroughly into the soil to plow depth. One very good method of applying lime is to apply it broadcast after the ground is plowed but before it is worked down with a disk or smooth harrow. Lime, itself, is not a fertilizer, but is necessary in correcting the acid condition of the soil and promoting the growth of soil organisms that are beneficial in the development of the alfalfa plants. One should be very careful and not apply more than the estimated amount of lime and this should be applied evenly over the entire field.

Seed Bed:

The preparation of a seed bed is one of the essential features in establishing a stand of alfalfa. This seed bed should be firm and lack clods of any size. One cannot put too much time or effort in the preparation of a good seed bed. After plowing, a disk harrow or cultipacker should be run over the ground until the seed bed is like a garden. Failure to properly prepare a seed bed is frequently the cause of a lack of success in obtaining a stand of this crop.

Fertilizer:

Alfalfa should have a top dressing of a fertilizer consisting of superphosphate and potash. Slight amounts of nitrogen fertilizer are also helpful in giving the young plants a vigorous start. Fertilizer should be applied just prior to seeding. This is best done by broadcasting the fertilizer evenly over the area to be seeded.



Seeds:

Only clean pure seed of high quality, applied at the rate of 15 pounds, is satisfactory to obtain a good stand. There are several varieties of alfalfa seed available some of which are particularly useful in regions where winter killing is a serious factor. Whatever the variety of seed used, one should be careful to see that only seed of high quality and germination is applied. Since alfalfa is a legume, it is commonly found to have nodules on its roots. These nodules are the home of bacteria that aid the plant in obtaining nitrogen for its growth. It is absolutely necessary that new seedings of alfalfa be inoculated with these nodule forming bacteria. This inoculation may be performed by mixing cultures of these organism with the seed just prior to the sowing. A second method, frequently spoken of as the soil inoculating method, may be carried out by taking soil from around the roots of alfalfa plants and mixing this with the seed to be sown. Either method gives satisfactory results if properly carried out.

Alfalfa seed is very small and should not be seeded deeply. It is well to broadcast the seed, either with a seeder or by hand, and cover later with a spike-tooth harrow. Care should be used in order not to cover the seed too deeply.

Pasture:

Fall seeded alfalfa should be planted by August 15th if possible. These plants should reach a growth of 6 to 8 inches if growing conditions are satisfactory during the late summer and fall. Under no circumstances should this fall seeded alfalfa be pastured during its first year of growth. The top growth should be permitted to stand to protect the plants during its first winter. Many cases of failure to obtain a stand of alfalfa can be traced to the fact that seeding was delayed and sufficient growth was not obtainable before killing frosts the first fall. Very little damage is caused by winter killing in case the seed is planted by the middle of August.

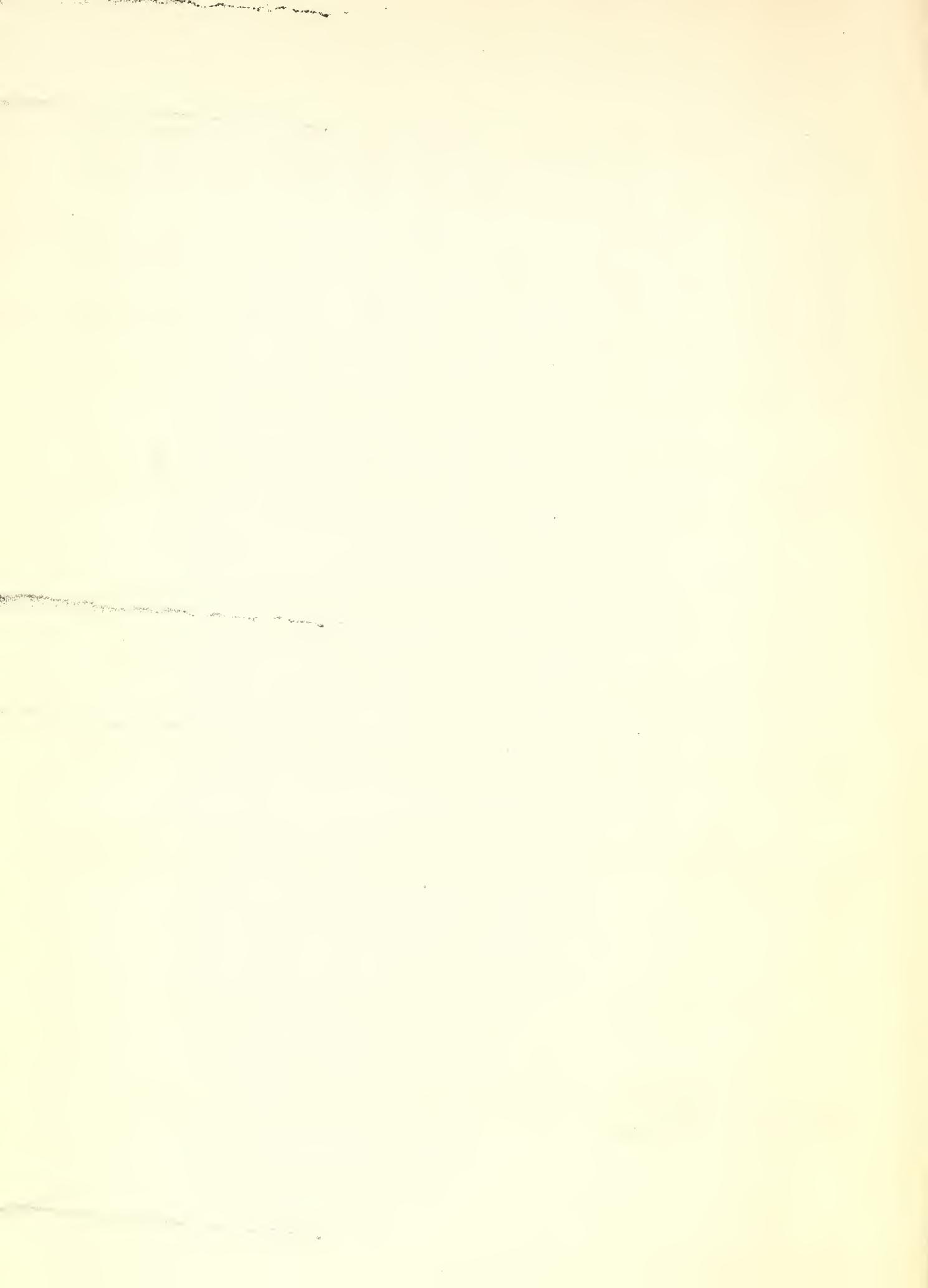
These statements relative to soil, lime, seed bed, fertilizer, seed and cultural practices are essential in the production of alfalfa and the neglect of any one may be the cause of failure in the growing of this crop.

- - - - -

"When in vain you toil blame the culture not the soil."

- - - - -

"Yesterday is but a dream - tomorrow is only a vision - but today we live - make every yesterday a dream of happiness and every tomorrow a vision of hope."



SPREADING LIME AND FERTILIZER

Much of the lime supplied by the Soil Erosion Service has now been placed on the farms within the area. The farmer is now confronted with the difficult job of seeing that this lime is properly applied to his pasture, meadow or crop fields. Lime is applied to the soil to correct an acid condition that has developed as a result of the loss of calcium and other bases through leaching processes that have been taking place over a period of years. To be effective, the lime should be applied evenly to the soil and whenever possible should be worked thoroughly into the surface 6 inches in which the bulk of the roots of plants are to be found. The effectiveness of the lime is dependent upon the size of the lime particles as well as the thoroughness of the mixing with the soil particles. Lime, if found in chunks or clods, or if applied unevenly to the soil, will cause harmful effects to plants growing in the area. Care should be used in the application of lime to see that it is not applied heavier than the recommended rate and to see that it is applied evenly to the soil surface.

A farmer who does not have a lime spreader and who must spread his lime by hand must be very careful to see that it is evenly distributed over the surface of the field. The following suggestions are given to help one arrive at a satisfactory estimate of the rate of spreading lime. A gallon of lime will weight approximately 12 pounds. This weight will vary depending upon the amount of moisture contained in the sample of limestone. A cubic foot of ground lime should weigh between 90 and 100 pounds, depending upon the amount of moisture contained in the lime. If one is obliged to spread the lime from a wagon bed or sled bed, he should carefully measure a container in order to determine the amount of lime that should go on a given area. The usual rate of application is recommended at 2 tons per acre.

Suppose a man has to scatter this lime by hand and has available a 3 gallon water pail. This 3 gallon pail, if filled level full, should hold approximately 36 pounds of lime. This will vary, of course, depending upon the amount of moisture found in the lime. If the recommended rate of spreading is 2 tons to the acre, this 2 tons or 4,000 pounds should cover 43,560 square feet, or a square a little over 200 feet on each side. A man equipped with a 3 gallon pail and seeding the lime broadcast at the rate of 2 tons per acre should cover a strip approximately 15 feet wide and 26 feet in length with each pail full. Examination of the area will give an idea of how heavy the lime looks on the ground after being properly spread. This example will give one an idea of the procedure in calculating the rate and method of seeding lime. If the farmer has a sled or wagon box, the size of the box should be calculated and the number of cubic feet determined, the approximate area of the field laid off, the proper amount applied, and care not to exceed the calculated amount should be used. Remember that too much lime is more serious than too little.



The spreading of fertilizer can be accomplished in a manner very similar to that followed in the spreading of lime. Here, however, since the amounts applied per acre are usually less than the case of lime, it is necessary to be very careful about applying the fertilizer unevenly or at too high a rate. Remember that commercial fertilizers are plant foods in a highly concentrated form and that a good deal of care should be used to see that the fertilizer is free of lumps at the time it is applied. Fertilizer, as a plant food, serves much the same position as salt does in human food. We do not relish a bite of pie only to find a big chunk of salt in the middle of it. That same thing would occur if we apply the fertilizer salts to the soil and leave them unevenly distributed. Before applying the fertilizer, one should carefully calculate the size of the field receiving treatment and should apply the fertilizer evenly and not in excess of the calculated amount. Most of the fertilizer supplied the farms by the Soil Erosion Service, up to the present time, has been superphosphate. Instructions have been given for this fertilizer to be applied to the pasture fields receiving treatment. This fertilizer, as well as the lime, may be applied to the pastures at any time. Since superphosphate is very apt to become hard and cloddy is stored for any length of time in the bags, these bags should be examined carefully and the clods broken by the use of a mallet prior to the time of seeding.

VOCATIONAL AGRICULTURE

Since the Soil Erosion Service itself is largely an educational program, we are happy to note that the Boards of Education in both Roane and Wirt counties have elected to put Vocational Agriculture in both the High School at Spencer and the High School at Elizabeth. We feel that a work of this kind will go a long way toward solving the agricultural problems of this area. We want the school people to feel that we are willing to cooperate with them in any way possible that will help in solving the problems of the people with whom we are all dealing. Especially do we want to work with the Vocational Agriculture teachers and the rural teachers whenever, in their judgment, we can be of service in helping solve the problems with which they are confronted.

Also, we want to work with the County Agents in their efforts to help solve the farm problems. We feel that they are doing an excellent piece of work and we compliment them upon the success they have been able to achieve in their work.

SOCIAL AND ECONOMIC SURVEY

The Soil Erosion Service in cooperation with the West Virginia University Experiment Station are conducting a social and economic survey of every farm in the area. Farm cost records will be obtained and studies made looking toward the organization of farm enterprises along more profitable lines. This may, in certain cases, lead to a complete reorganization in present farm practices or eventually develop into a specialized type of agriculture for certain farms in the area.

Farm families, farm incomes and farm expenditures will be studied with the hope that from this work some different recommendations may be available that will improve the home life of the farmers on this project.

CARE OF MATERIALS FURNISHED

BY
S. E. S.

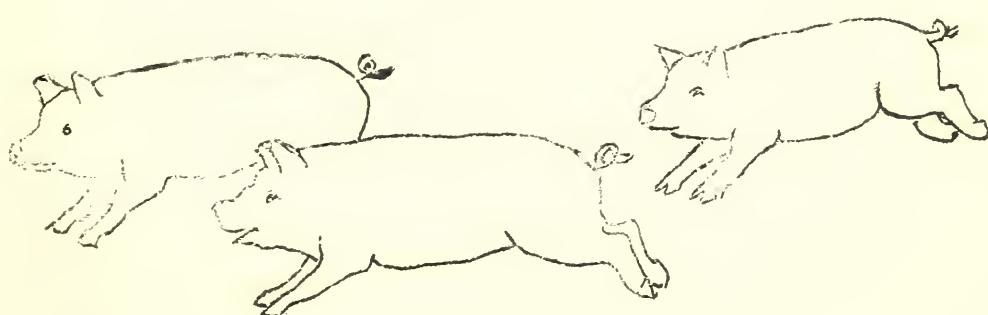
At the present time, the Soil Erosion Service is delivering to the farmers in the project area approximately 150 tons of lime per day. Cooperators should make every effort possible to take care of this lime, when it is delivered to the farm. They should arrange to have it piled in position where it will not be eroded away by hard rains. Some damage has been caused in this way by the hard rains we have had in the past two weeks.

The cooperator should bear in mind that the truck driver is not responsible for delivering lime any more than to put it on his farm. At first it was planned to place the lime in stock piles and from there let the farmer receive the amount allotted to him. After considering the trouble some farmers would have in hauling the lime from stock piles, it was decided to make every effort to place the lime on the cooperators farm. This does not mean, however, that the lime is to be placed in the particular field on which it is to be used.

The delivering of fertilizer has been going on for the past two months. This fertilizer should be stored in a dry place and taken care of in the best possible way until it is used. While some seed has been delivered, the work along this line has not gone very far. During the next month, the trucks will be busy in delivering seed and fertilizer. All seed not to be used immediately, should be stored in a dry place and cared for in such a way as to prevent destruction from mice and rats. Expansive seed, such as clover and alfalfa and grass seed, can be protected by stretching a wire across the grainery and hanging the seed over the wire.

Members of the Soil Erosion Service are going to try in every way possible to see that materials furnished by the Government are taken care of and used in a way that they will do the greatest good.

Cooperators should feel free, at any time, to call upon any member of our staff for help or suggestions on how they can better carry out their program. At the same time, any suggestions from the cooperators as to how these materials can be taken care of and used will, at all times, be appreciated.



7

ESTABLISHING NEW MEADOWS

One of the most serious problems confronting the farmers in this area is obtaining a sufficient amount of winter feed. With this idea in mind, the Soil Erosion Service has desired to aid the farmer, wherever it is deemed advisable, in establishing some new meadow. In the first place we are making an effort, wherever there is land suitable, to help each cooperator in establishing one acre of alfalfa. In addition to that, we are helping the farmers establish new meadows of the clover-timothy type. In most cases, these meadows will be seeded to barley or wheat this fall. When seeded to barley, the following plan should be followed rather closely.

Where the land is in sod and has not already been plowed, it should be plowed at once. After plowing, it should be harrowed and disked thoroughly so that a good seed bed will be formed. A good seed bed is very essential in order to insure success with cultivated crops. Barley should be seeded about the 5th of September. Seeding done later than the 10th of September will probably not give the best results. On meadows established by the Soil Erosion Service, grass seed and clovers will be furnished. Orchard grass at the rate of 5# per acre and timothy at the rate of 4# per acre will be seeded at the time barley is seeded. Both alsike and red clover will be furnished and will be seeded in the spring as soon as freezing weather has passed, at the rate of 6# of red clover and 2# of alsike per acre. This seed should be sown broadcast and harrowed in. This harrowing can be done with a 60 tooth harrow. Where a disk grain drill is obtainable, it is preferable to use it and run lightly over the ground, crossing, if possible, the rows of barley. Where seeding is done on corn stubble land or soy bean land, it will not be necessary to plow. Disking the ground thoroughly will be sufficient to prepare the seed bed.

The establishing of a new meadow with wheat is done much the same as with barley, except the date for seeding wheat should be around the first to the middle of October.

In establishing these new meadows, the Soil Erosion Service will furnish, not only the seed, but will furnish lime to fill the need of the particular soil and 350# of 20% super phosphate per acre.

It is felt that where cooperators prepare their seed bed and take pains with their seeding that they will be able to secure an excellent meadow. It will not only help out in solving the problem of winter feed, but will materially aid in controlling erosion as well.

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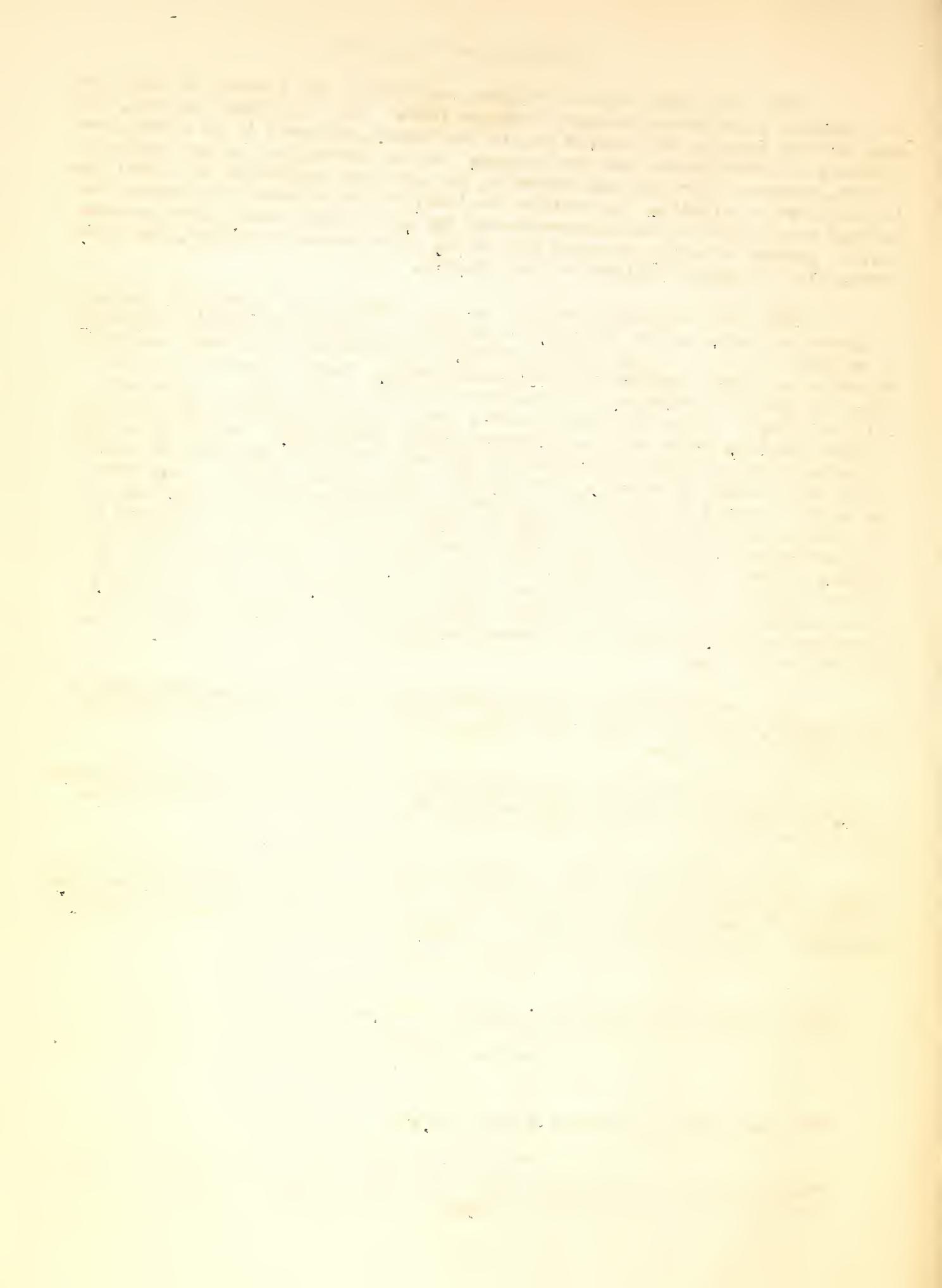
"All rewards are gained by faithful service."

* * * * *

"Work - don't make excuses - make good."

* * * * *

"When a person gets into the habit of wasting time, he is sure to waste a great deal that does not belong to him."



8

ENGINEERING PROGRAM

Our engineering program is just now beginning to take form. It will be directly connected with our forestry work and each in turn will supplement the other. It is obvious to the careful observer that forestry without engineering or engineering without forestry does not render full service in any program of erosion control. It is felt that our engineering work will be concentrated on the type of work which will be of most benefit to the farmers in this area. Engineering structures such as dams, etc., will be built to protect land that is of permanent value from an agricultural standpoint and land that adapts itself to any type of well planned land use. We cannot justify the expenditure of large sums of money on land that has very little value from an agricultural standpoint.

We have on this project, we feel, a very competent engineer - one who sees the problem of the farmer, analyzes it carefully and is willing to take whatever steps necessary to benefit the farmer or farmers involved.

Let me urge you to bring your serious problems such as active gullies or stream channeling to this office. We will carefully analyze your problem and do whatever work is necessary to control it from the standpoint of soil erosion control.

PLANTING

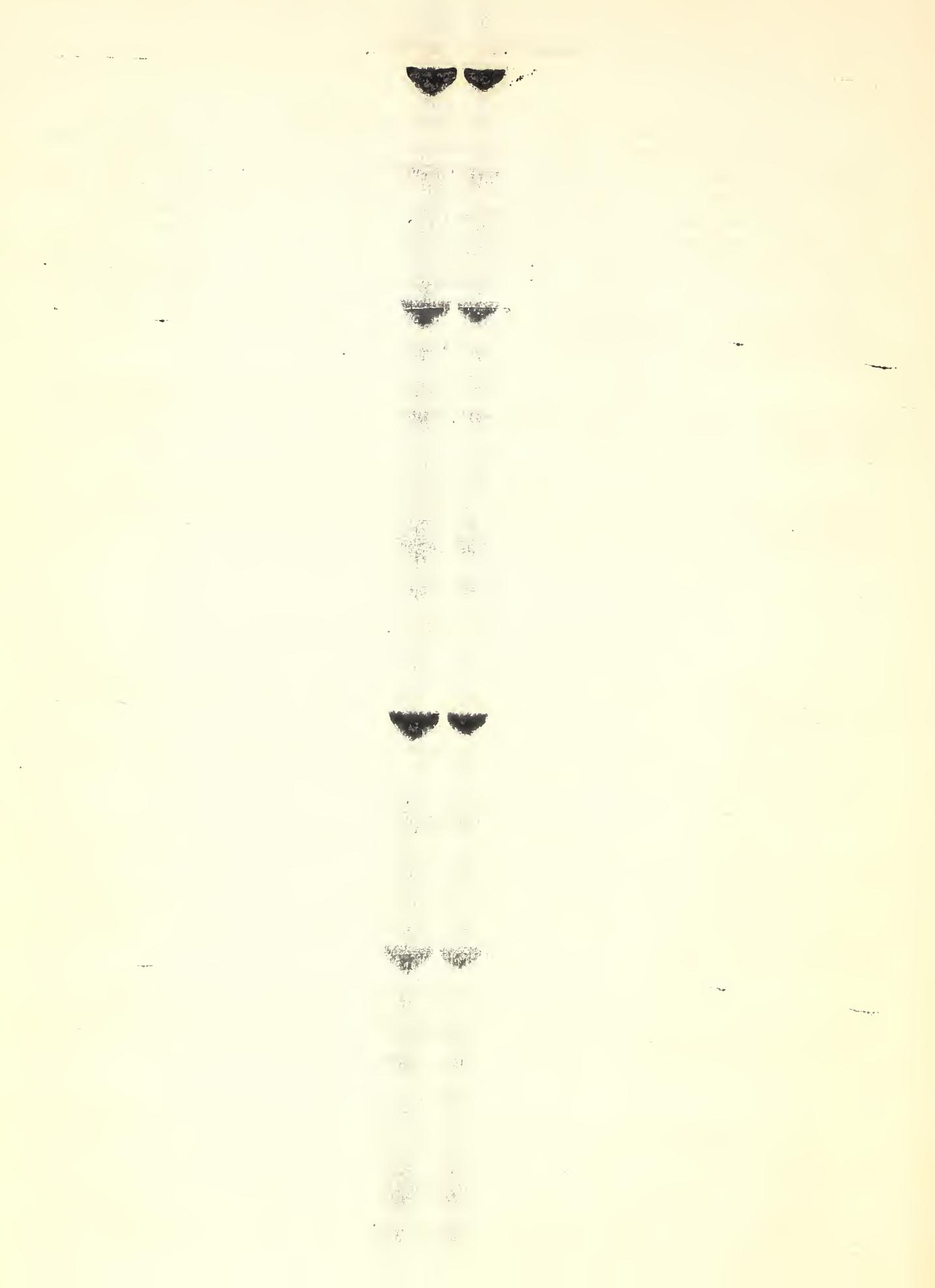
Since the first of June, contact men have been busy working out and signing agreements with the farmers. One of the most important parts of their work has been securing land for reforestation. Our plans at the present call for the re-forestation of approximately 5,000 acres during the fall of 1934 and spring of 1935. At the present rate, there is every indication that we will exceed this amount.

We have a contract with the State Department of Conservation to furnish us during the fall of 1934 and spring of 1935, 3,150,000 black locust, black walnut and yellow poplar seedlings. These seedlings are to be planted on our project in mixed stands wherever possible. A few pure stands will be planted due to the fact that we have a more abundant supply of black locust than of black walnut or yellow poplar.

It is expected and hoped that this initial planting of 1934 and 1935 will stand as a monument to conservation and soil erosion, being the first planting done by the Soil Erosion Service in the State of West Virginia.

NUTS

The Soil Erosion Service is very desirous of securing outstanding varieties of black walnut, hickory, or any other of the nut bearing trees of which the nuts may be utilized for food. We are anxious to develop good varieties in our nursery, to be used in planting on our Soil Erosion Project. Any one having a black walnut or hickory tree, bearing particularly fine nuts, easily cracked and of fine flavor, should communicate this information to the Forester or some member of his staff.



Since the dawn of history forests have been vital to human life, well-being, and progress. From them man has obtained fuel, shelter, and food. In addition he now looks to the forest for much of his recreation. During the past year 34,672,125 people visited the National Forests of the United States.

American history is largely a forest history. To the forest, which originally covered half of the land within the borders of the United States, is due in a large measure our national wealth and our national character. Some idea of the significance and importance of forests to the well-being and prosperity of our people may be realized when we stop to consider its relation to our present situation and the part it must play in planning for the future and in social readjustments now needed.

The story of the American forest, as pictured by F. A. Silcox, chief of the United States Forest Service, goes like this: "A family in a covered wagon settled in the heart of the woods. With axe and fire, forest and vegetative cover were cleared from acre after acre of rich black soil. Cotton or corn was planted. Generation upon generation builded upon that fine homestead and in time a mansion grew. Sons and daughters went out into the world and grandsons sat in seats of learning and lawmaking. While the fine culture of a state was coming into flower, forests disappeared from surrounding slopes, rich productive land washed downhill, clay and subsoil showed through, gullies deep and wide ate their way toward the proud mansion on the knoll. Until one day when the tax collector came there was no money to pay. And finally the fair land lay in tuins, bare hillsides gaping to the weather, every rain carrying tons of silt to bury more good ground and aggravate the floods beyond."

This story has been enacted on farm after farm throughout many parts of the country. It has been the story of whole communities. It is almost the story of our national policy of the past in relation to the use of land. Only geologic time, which takes no note of the rise and fall of human civilizations, can repair much of the damage that has been done."

Forests have an influence on water for domestic, irrigation, and industrial uses; on the navigability of rivers and the fertility and very existence of agricultural lands. Popular conceptions and European experiences that the destruction of forest cover leads to erosion, and that the presence of such cover is the most effective means of erosion control, have now been substantiated in the United States.

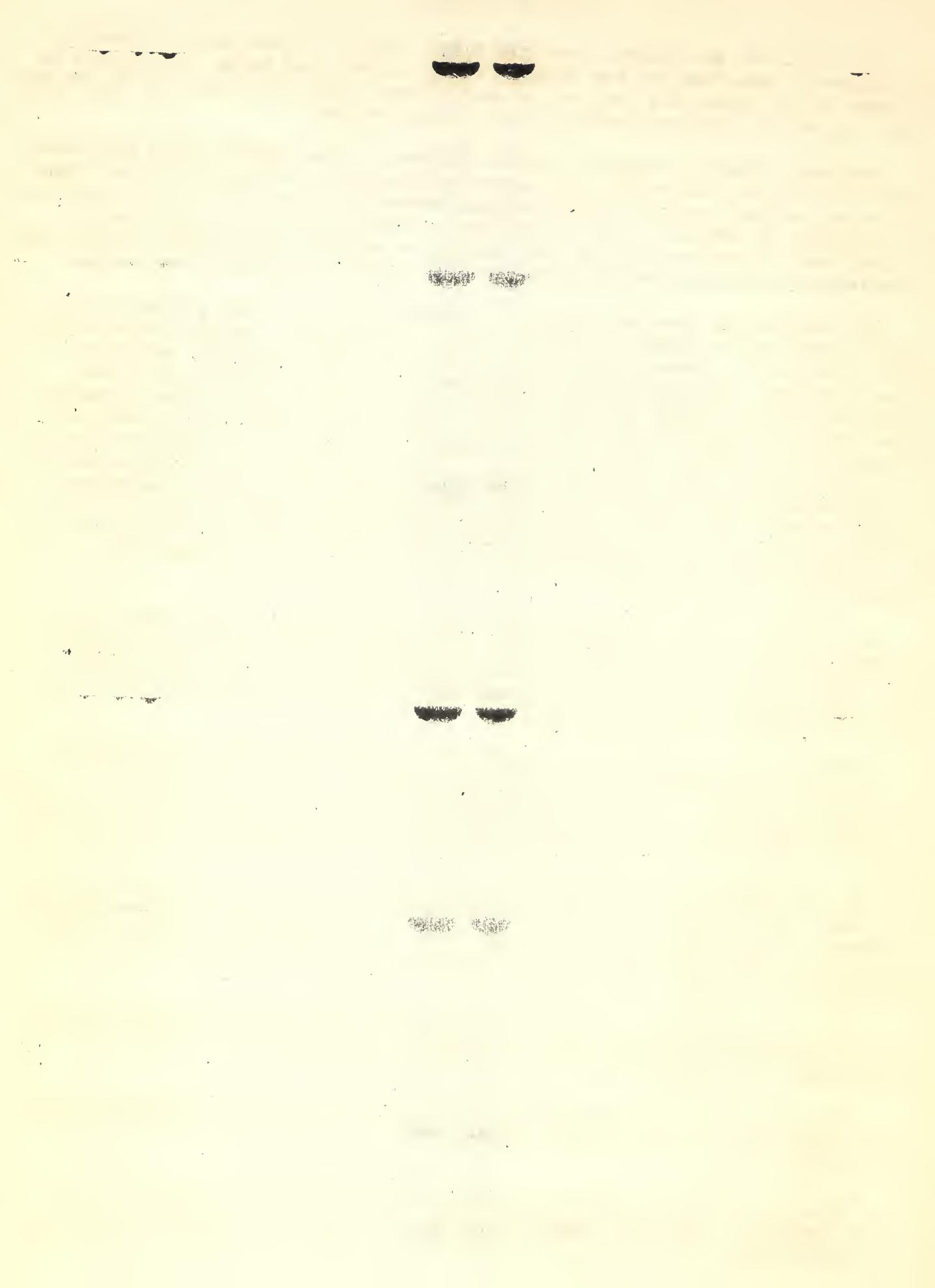
If you would realize the dependence of family life upon the forest consider:

(1) That main urban centers of population on the east coast, from Boston to Baltimore, consume more than two billion gallons of water daily and large cities are bringing their water supplies from distances up to 450 miles, at costs which range up to 350 million dollars for a single project.

(2) That silt from denuded slopes can quickly clog irrigation and reservoir systems which--valued at more than one billion dollars--have been built in 19 western states to irrigate more than $19\frac{1}{2}$ million acres.

(3) That erosion and floods have caused the abandonment of at least $8\frac{1}{2}$ million acres of the Piedmont and Coastal Plains, from the Potomac to the Mississippi, in the last 20 years.

"Today's millions are still dependent, as were yesterday's thousands, upon our forest heritage," Mr. Silcox ~~says~~ declares. "We still must look to the forest for such vital necessities as water, lumber, and wood for many uses; for cellulose the-



goes into countless everyday necessities; for much of the wool and leather we use and the meat we eat.

"Other things, too, the forests provide. Opportunities for recreation and inspiration; protection against soil erosion; sustenance and a home for much of our remaining wild life; living reservoirs from which comes water for use in huge cities and on vast irrigated tracts. Work, too, is a forest contribution; full-time work, in normal years, for more than $1\frac{1}{2}$ million people in logging and wood manufacture alone and in addition, opportunities afforded by industries dependent upon forest water, forest wild life, forest reforestation, and forest range. In all these ways our forests have contributed to family life."

The nation's forests are now being called upon to make a large contribution in the readjustment of human relations. We are faced with a huge program of social rehabilitation. In that program our forests offer a wonderful opportunity for systematic planned management that will insure the stabilization and development of a satisfying and wholesome family and community life, on which rests the future security of our nation.

This article was issued by W. Va. University and is being forwarded to you by the Soil Erosion Service, Spencer, W. Va. Project No. 13.

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PASTURE SURVEY

The pasture survey has been started in the area with the idea of obtaining certain basic information that will aid us in planning a better land-use program than would be otherwise possible.

First, we wish to obtain the present flora and density and the relative carrying capacity of the pastures throughout the area. After a survey has been made of an individual farm, we will be able to determine, from time to time, the value of lime and fertilizer treatment and improve the flora and density from a pasture standpoint as well as from an erosion standpoint. It will also give us a check on the value of certain pasture management that we are able to work out with the cooperators. Such as refraining from pasturing during the fall, winter and spring or with definite rotations which we are able to work out with the farmers.

It is our belief that better care of pastures during the fall, winter and spring and rotations during the growing season, along with treatments of pasture, is going to increase the carrying capacity quite materially.

We are asking that the cooperators work with us in every way possible to better care for and improve the pastures.

* * * * *

"Most people think of success as getting, but success begins in giving."

Quotation from Secretary of Agriculture, James Wilson, 1901, in his report on the Southern Appalachian Mountains, to President Theodore Roosevelt.

FOREST CLEARING AND AGRICULTURE
IN THE SOUTHERN APPALACHIANS.

"Ordinary farming on these mountain slopes can not exist permanently and should never exist at all. Not more than 10 percent of the land of this region has a surface slope of less than 10 degrees. In this region land with slopes exceeding this can not be successfully cultivated for any considerable time, because its surface is rapidly washed into the rivers below by the heavy rains, and the same agency rapidly leaches out and carries to the sea its more soluble and fertile ingredients. The valley lands have already been largely cleared, and the farmers are now following up the mountain slopes. In many cases their cleared patches have well nigh reached the mountain summits. This process is going on with greater rapidity, because each short-lived hill-side field must soon be abandoned. The underbrush is destroyed, the trees are girdled, and for one, two, or three years such a field is planted in corn, then a year in grain, then one or two years in grass; then the grass gives place to weeds, and the weeds to gullies."

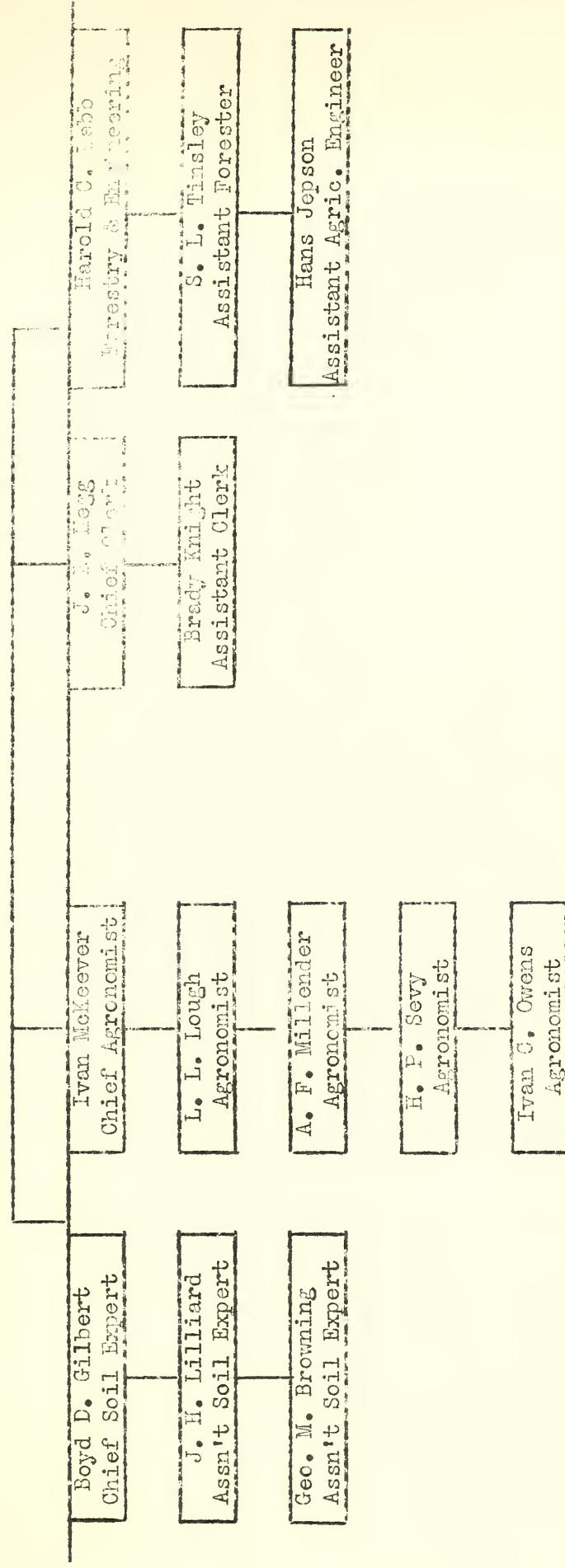
Such a field has usually passed through its cycle in five to ten years and another must be cleared to take its place. A forest which is the growth of several centuries perishes in less than a decade; a soil which is the accumulation of a thousand years has been cleared, cultivated, abandoned, and is on the downward road to the sea within less than a decade. Such is the brief life history of many thousands of small mountain fields in this Southern Appalachian region. But even the native farmer is beginning to realize that the clearing of these mountain slopes is producing floods that wash away the valley farms, and that the time must come when he will have successively cleared and destroyed all his available mountain land."

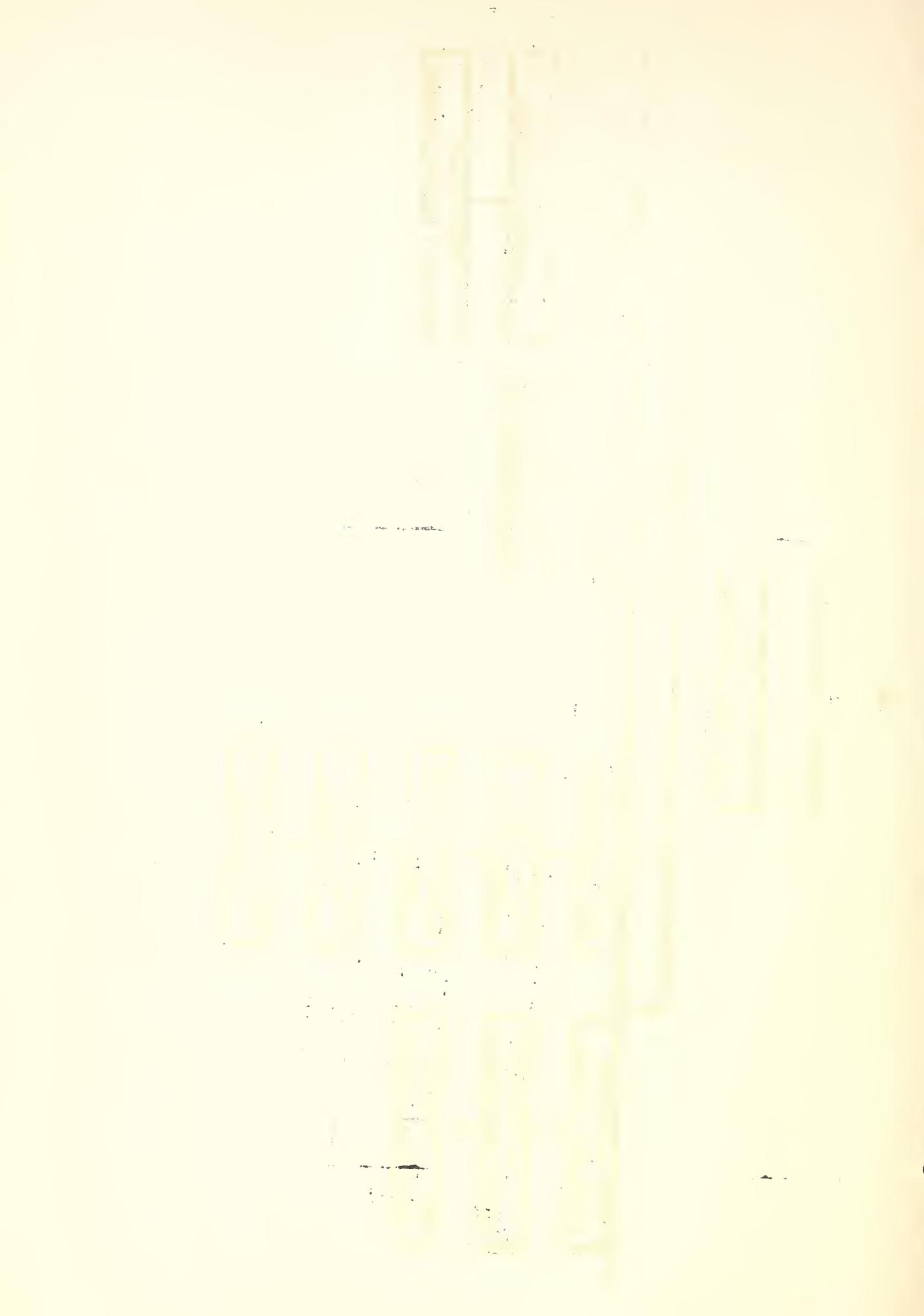
It is certainly remarkable that Theodore Roosevelt and James Wilson pictures 35 years ago the conditions which exist today. In view of the above facts can any of you justly question conservation steps now being taken by our own government.

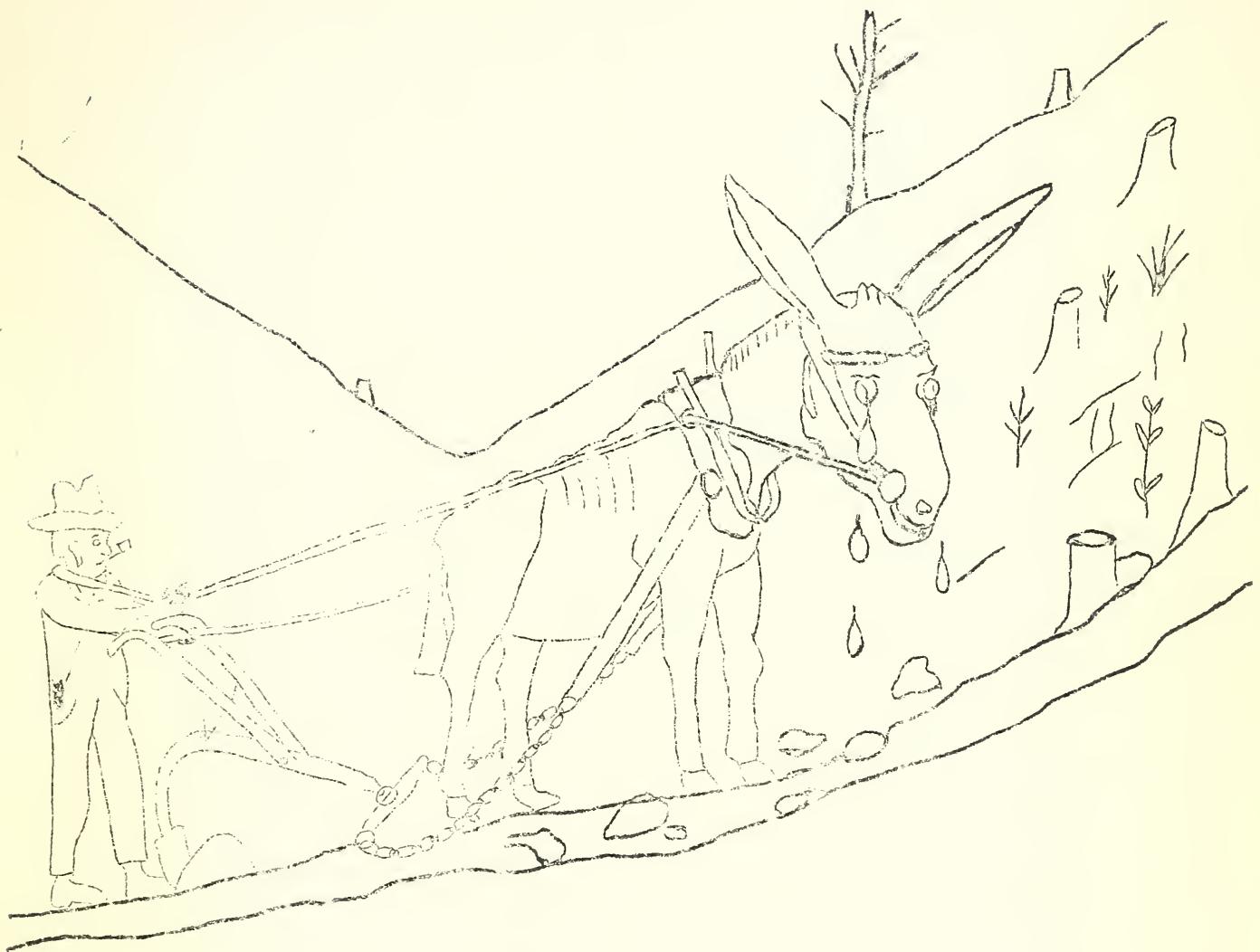
"Up to the doorsills of the log huts stretched the solemn and mysterious forest. There were no openings to break its continuity; nothing but endless leagues on leagues of shadowy, wolf-haunted woodland... On the higher peaks and ridge crests of the mountains there were straggling birches and pines, hemlocks and balsam fir; elsewhere oaks, chestnuts, hickories, maples, beeches, walnuts, and tulip trees grow side by side with many other kinds. The sunlight could not penetrate the roofed archway of ...leaves; through the gray aisles of the forest men walked always in a kind of midday gloaming ... Save on the border of a lake, from a clifftop, or on a bald knob... they could not anywhere look out for any distance. All the land was shrouded in one vast forest. It covered the mountains from crest to river bed, filled the plains, and stretched in somber and melancholy wastes towards the Mississippi".

EXECUTIVE ORGANIZATION

H. H. HOOVER
REGIONAL DIRECTOR







"Civilization begins and ends with the plow."

